

REMARKS

The Final Office Action dated December 29, 2004 has been considered. Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

Summary of the Final Office Action

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,996,413 to McDaniel et al. (hereinafter "McDaniel") in view of "the English translation of Mizuno (JP 09-051476 A)" (hereinafter "Mizuno").

Summary of the Response to the Final Office Action

Applicants amend claim 1 differently describe an embodiment of the instant application consistent with the originally-filed disclosure and to afford Applicants with coverage to which they are entitled. Accordingly, claims 1-4 remain currently pending in the instant application.

Rejections under 35 U.S.C. § 103(a)

Claims 1-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over McDaniel in view of Mizuno. To the extent that this rejection might be deemed to still apply to the claims as newly-amended, it is respectfully traversed for at least the following reasons.

Independent claim 1 has been newly-amended to recite a solid state imaging device combination that includes a "signal processing unit comprising: a variable capacity integrator circuit having a capacitor for inputting the voltage signal outputted from the output terminal of said integrator circuit and functioning as part of a Correlated Double Sampling (CDS) circuit."

Accordingly, Applicants respectfully submit that in the solid-state imaging device combination recited in newly-amended independent claim 1, the signal processing unit, which

includes the variable capacity integrator circuit, comparator, and capacity control section,
includes a CDS (Correlated Double Sampling) function for eliminating offset errors and also
includes an A/D-converting function for converting analog signals into digital signals.

Moreover, in the variable capacity integrator circuit 50 (see Fig. 1), the capacitor 51 is provided between the integrator circuit 30 and the amplifier 52. Accordingly, this capacitor 51, included in the structure of the embodiment recited in newly-amended independent claim 1, functions as part of the CDS circuit for eliminating offset errors. See, for example, page 6, lines 15-20, page 12, lines 3-5, and page 40, lines 17-26, of the instant application's specification.

Accordingly, as explained in the previous Amendment filed on August 2, 2004, the combination of the integrator circuit 30 and the capacitor 51 for eliminating offset errors is an important feature of the embodiment of the present invention as currently recited in independent claim 1. For example, Applicants respectfully submit that the utilization of the instant application's disclosed signal processing unit having both a CDS function and an A/D converting function makes it possible to realize an improvement in the S/N ratio and also to realize improved offset error suppression with a simple circuit configuration. As a result, it is possible to attain a smaller total circuit scale, and a smaller chip size as a consequence, as described, for example, at page 40 of the specification of the instant application.

Applicants respectfully submit that the above-described structure and effects of the solid-state imaging device combination recited in newly-amended independent claim 1 of the instant application is neither disclosed, nor even suggested, in McDaniel and Mizuno. Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. § 103(a) should be withdrawn because neither McDaniel nor Mizuno, whether taken singly or combined, teach or suggest each feature of independent claim 1, as amended. MPEP § 2143.03 instructs that "[t]o

establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 409 F.2d 981, 180 USPQ 580 (CCPA 1974)."

Furthermore, Applicant respectfully asserts that dependent claims 2-4 are allowable at least because of their dependence from claim 1, and the reasons set forth above.

CONCLUSION

In view of the foregoing amendments and remarks, withdrawal of the rejections and allowance of the pending claims are earnestly solicited. Should there remain any questions or comments regarding this response or the application in general, the Examiner is urged to contact the undersigned at the number listed below.


If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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By:


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